

REMARKS

Reconsideration and allowance of the present application based on the following remarks are respectfully requested.

At the outset, Applicants respectfully submit that the finality of the current Office Action was premature and not necessitated by Applicants' previous amendment.

Therefore, while Applicants appreciate that the previous grounds for rejection under 35 USC 103(a) and 112, have been overcome by the amended claims and remarks, it is respectfully submitted, for the reasons discussed below, that the amendments did not necessitate the new grounds for rejection.

Claim 11, an originally dependent claim, was preliminarily amended (to eliminate multiple claim dependencies) concurrently with the filing of the application to read:

“Shaped article obtained according to Claim 1.”

Original Claim 1, recited,

“Process for the production of a shaped article comprising the compression of one or more fibre layers containing polyolefin fibers, characterized in that the fibre layers contain 0.02 to 25 wt.% of a solvent for the polyolefin (relative to the total weight of the polyolefin fibres and solvent in the fibre layer).”

In response to the previous Office Action, in which claim 11 was objected to for depending from a non-elected claim and was rejected under Section 103(a) as unpatentable over Van der loo et al, WO 97/00766 in view of Kavesh et al, US 4,413,110, claim 11 was amended, to recite,

“Shaped article obtained by compression of one or more fiber layers containing polyolefin fibers, wherein the fiber layers contain 0.02 to 25 wt.% of a solvent for the solvent (sic) for the polyolefin, relative to the total weight of the polyolefin fibers and solvent in the fiber layer.”

As may be readily appreciated from consideration of the original claim 11 (as dependent on claim 1) and the amended claim 11, no new limitations were added when the claim was rewritten to overcome the objection.

Accordingly, the new ground of rejection applied against claim 11 was **not** necessitated by the amendment to the claims.

Similarly, the amendments to claims 12-14 were substantially formal in nature and did not add new limitations or change the scope of the claims. (The change, in claim 14, of “one or more fibre layers compressed on top of one another” to -- two or more fiber layers compressed on top of one another-- merely made the claim internally consistent and did not raise any new issues because Kavesh was cited for a plurality of layers.)

Therefore, notwithstanding the presentation of new claims, the new ground for rejection as applied to previous claims 11-14 did not raise new issues or necessitate a new search.

Accordingly, it is respectfully submitted that the finality of this office action is premature given the new grounds for rejection relying on new prior art which Applicants have not yet had an opportunity to consider.

In any event, it is respectfully submitted that the amendments to independent claims 11, 12, and 18, wherein the amount of solvent is changed from “0.02 to 25 wt%” to “0.05 to 5 wt%” should be entered because such amendments do not raise any issues of new matter nor new issues requiring further consideration or search by the Examiner. In this regard, it is noted that previous claims 14, 21 and 24 already recited a range of “0.05 to 5 wt%” of solvent.

Claims 14 and 16 are amended to incorporate the tensile strength (see, e.g., page 5, lines 5-6). Entry of these amendments is also requested in order for the claims to more particularly describe a preferred embodiment of the claimed invention and to even more explicitly distinguish from the disclosure of the newly cited prior art to Motoooka et al.

In view of the amendments in claims 11 and 12, claims 21 and 24 are amended to recite a solvent content of from 0.1 to 2 wt% (see, e.g., page 10, lines 20-21).

The amendment to claim 11 overcomes the rejection under 35 U.S.C. § 112, second paragraph.

Before discussing the rejections in the Office Action, the Examiner’s attention is directed to the concurrently filed Information Disclosure Statement in which JP 60 151311A with an English translation is submitted. This reference was cited in the assignee’s copending application Serial No. 09/844,247.

Reconsideration and withdrawal of the rejection of claims 11-14 and 16-24 under 35 U.S.C. § 103(a) as being unpatentable over Van der loo et al, WO 97/00766 (WO 766) in view of Motooka et al, U.S. 4,545,950 (US 950), is respectfully requested for at least the following reasons.

WO 766, which represents work by the assignee of the present application, does relate to a ballistic-resistant molded article comprising a compressed stack of single layers which consist of unidirectionally oriented reinforcing fibers and about 30 weight percent of a plastic matrix. This molded article is characterized by having at least 98.0% of the theoretical maximum density.

There is neither disclosure nor any suggestion whatsoever of fiber layers containing 0.05 to 5 wt.% of a solvent for the fibers.

The skilled practitioner would not have been motivated by the disclosure of US 950 to modify the molded article of WO 766 but, if motivation can be found, the resulting combination would not have led to the presently claimed invention.

The disclosure of US 950 relates to stretched articles of ultra-high molecular weight polyethylene (UHMWPE). The UHMWPE articles are prepared by melt-kneading a mixture of certain proportions of UHMWPE and paraffin wax having specified melting point and weight average molecular weight in a screw extruder at a certain temperature. The molten mixture is melt-extruded through a die at a certain temperature. The unstretched extrudate is cooled and solidified and thereafter subjected to stretching at a certain temperature at a stretch ratio which depends on the presence or absence of a draft during the melt-extrusion step. (See, e.g., Abstract, Summary at col. 1, lines 18-44.)

From the description at column 1, line 62 to column 2, line 34, it is apparent that the use of the paraffin wax is intended to solve the problems of the prior art use of solvents to facilitate the stretching of monofilaments of high-density polyethylene. From the disclosure at column 3, lines 46-62, it is appreciated that the patentees are concerned with UHMWPE stretched shaped articles having high tensile strength and modulus of elasticity and a high quality of excellent uniformity and reproducibility and being substantially free from stretching unevenness.

It is respectfully submitted that the practitioner of ordinary skill would not have been motivated to form the ballistic-resistant molded articles of Van der loo WO 766 with the high tensile strength and modulus of elasticity polyethylene fibers taught by Motooka US 950 for

at least the reason that Van der loo uses drawn and oriented but not highly stretched fibers which are the subject of Motoooka US 950.

However, even if despite the different objectives and properties of Motoooka's stretched UHMWPE articles relative to the unidirectionally oriented reinforcing fibers of Van der loo's WO 766, the practitioner would have been motivated to try the stretched UHMWPE of Motoooka US 950, there would still not be any motivation or basis for selecting such UHMWPE having a solvent content of between 0.05 and 5 wt%.

In this regard, for example, there is no disclosure or suggestion in Motoooka US 950 that the content of the normally solid flowability improver, such as paraffin waxes, has any bearing on the qualities of the stretched fibers which would be useful in the ballistic application of Van der loo WO 766. Certainly, nothing in the disclosure of Motoooka US 950 would have suggested an amount of solvent for the layer of the polyolefin fibers much less, an amount within the range of 0.05 to 5 wt%.

There is nothing in the disclosure of Motoooka US 950 which suggests that the fibers are "ballistically effective" or are characterized by a high tensile strength, a high tensile modulus (e.g., at least 40 GPa) and/or high energy absorption. Conversely, there is nothing in the disclosure of Van der loo WO 766 to suggest any desirability or usefulness of highly stretched fibers.

In addition to the above, the disclosure of Motoooka US 950 fails to include any suggestion of polyolefin fibers having a modulus of tension of at least 800 g/den or a tensile strength of at least 30 g/den, as set forth in pending claims 14 and 16.

Accordingly, it is respectfully submitted that the subject matter presently claimed would not have been *prima facie* obvious over Van der loo WO 766 in view of Motoooka US 950.

In view of the foregoing, the claims are now believed to be in form for allowance, and such action is hereby solicited. If any point remains in issue which the Examiner feels may be best resolved through a personal or telephone interview, please contact the undersigned at the telephone number listed below.

All objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited.

Respectfully submitted,

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